

2010 Summer VHF/UHF Field Day

VK4ADC/P in QG61OU

Australia

It's January here in Queensland, Australia and that means it's hot - about 30-31 degrees Celsius according to the Weather Bureau... in practice more like 35 degrees ... and the sun burns exposed skin quickly. I went back to QG61OU / Beechmont in the Gold Coast (famous for its *sun* & surf) hinterland for this year's Summer Field Day and even though I wore a hat most of the time, the top of my head still got sunburnt. The only time I didn't wear a hat was when I was turning the antennas or starting the generator - and that was only for a few minutes at a time. I guess that mentioning the weather seems a strange way to start a report on the radio happenings on a Field Day but when we have this type of event in summer, the heat is a major factor. I was lucky though - no rain during the course of the day or afternoon storm to chase me into packing up early.

This outing was a little different from the 2009 field days (details of each from the menu at top of page) because this time I took a camper trailer as the shelter from the elements - as the photos below show. The radio gear had changed a little but not much. The radio gear for 6 & 2 metres SSB and FM was still the Icom IC-7400, the driver for the 70cm transverter was still the Icom IC-718 but the transverter was new (more on that later). The homebrew 23cm transverter and Kenwood TR751A transceiver were the same as last time and no changes were made to the antennas at all. The power source was still the 2 x 12v car batteries in parallel as used last time (Spring 09 FD) plus the same petrol generator. After all, the gear worked out pretty well last time so why make massive changes.

Reading the above makes it seem like nothing had changed from last year but that isn't really true. A simple fact is that *active* VHF & UHF FD stations seemed to be in the minority in South East Queensland. I seemed to end up working the same dedicated stations on each available band after the 3 hour repeat period and apart from some brief bursts of sporadic E on 6 metres to VK2 & 3. The best contacts were on 2 metres SSB - north to Glenn VK4BG at Hervey Bay (318km) and to south to VK2MAX (330km). The high tension powerline noise was a problem but it was different in nature - this time it was near-constant while during previous visits it has been "bursting" then quiet for a while as the wind gusted and then eased.

One thing very noticeable about the propagation on 6m this time around was how quickly the signal "landing zone" was shifting. One minute a signal (eg VK2 or 3) was S9 on the meter and the next it was in the noise so people who didn't do a quick RST-serial and grid exchange didn't get a complete QSO. Stations to the north of me were often then heard exchanging/reporting the same station typically at 59 after it had quickly faded here. There will be a number of 6m stations who may quote a contact with me in their logs but they don't appear in mine simply because they took too long with "general details" and the signals faded before the *necessary* contact detail exchanges could be completed (and thus have the contact validated). In those cases I was forced to simply delete the partial details from the log using the "Clear" button in VKCL.

I wasn't the only one with problems on 23cm but my LO was pulling with modulation (read that as at high current drain) on SSB - so a number of the later contacts on this band were conducted on FM on 1296.160, .170 or .200. Fortunately most of the 23cm operators could easily switch to FM so it made the process even quicker than trying to resolve the multitude of SSB signals *that were supposed to be* on 1296.150 or .160.....

There was a little breeze coming through the windows of the camper trailer from time to time - but it was still HOT ! The windows were all open, the door to the west was left open and the northern entrance was simply left open too. The extra heat coming off the radios wouldn't have even been noticed even given the high transmit duty cycle of the IC-7400 on 2m & 6m SSB. Maybe I will try to find one of those old rotating-style 12v car fans (provided it is a brushless type) and add it to the field kit for future events.

The generator was run for about 1/2hr at a time when the battery bank voltage dipped below 12.0v so about every 1 to 1-1/2 hours towards the end of the event, particularly trying to coincide the running with "slow times" (i.e. between station re-works). The DC generator output is rated at 8 amps for those who are interested in that aspect. The power drain was all of the transceivers with varying transmit cycles, the transverters (ditto) and the PWM charger for the Compaq notebook computer - and it had accessories all demanding power. All in all, the battery bank held up well.

As mentioned above, the 70cm transverter was new. Very new in fact and only finished 2 days before the event. A few weeks before, it was an idea in my mind then a circuit board layout on the PC and a number of plastic bags containing mainly surface mount components with a major hope that I would get the project ready in time for this field day. I produced PCBs using positive resist material, mounted components and finally powered it up one section at a time. Yes, I encountered difficulties because I was not just copying an existing design but melding from a few "idea sources" including a DEM 432/28 design, some from the Minikits 23cm design, plus some local work-ups and making a complete unit from those ideas. In the creation process, it appeared that at some stage I over-drove the Mitsubishi RA60H4047M1 RF power block and damaged that beyond repair (1st section blown, output still ok). Mark from Minikits urgently despatched me a 30 watt RA30H4047M and I was able to install it and have the transverter producing 30+ watts at 432 in time for the FD outing. I made mistakes in its design but I think that it was good

experience (if not costly.. RA60H..'s are not cheap.) and will give me a better background to approach new projects using SMD components and techniques. More details on my experiences in creating this transverter will appear on another web page on this site shortly - after I have time to document the final version.

The following thumbnail images will enlarge if you roll your mouse cursor over them....



Saturday morning 7.15AM : Camper trailer attached, antennas on top of the 4WD & ready to head off.

The 2 x 70cm yagis are in under the camper vinyl cover, along with some of the mounting brackets. On the trip home afterwards, the 23cm yagi, the 2x70cm yagis and miscellaneous hardware went inside the camper trailer base.



9.25AM : On site & partially set up - the "top shot" of antennas already in the air.

Top : 6m FM whip - 52.525
 23cm yagi - 1296.150 MHz SSB & 1296.200 MHz FM
 70cm horizontal yagi - 432.150 MHz SSB
 2m horiz/vertical yagi - 144.150MHz SSB (Horiz) & 146.5 MHz FM (Vert)
 70cm vertical yagi - 439MHz FM
 6m horizontal yagi - 50.150 MHz SSB



9.25AM - The "bottom shot" : i.e. the bottom of the photo at left. The car was aligned exactly True North - South by using an image printout from Google Earth & rechecked against a magnetic compass.

The good thing about this mast mounting method is that all I need to do is to park the rear tyre on the mounting plate and it is all self-supporting. No holes in the ground, no guy wires/ropes...

The full details are available from the "Field Day Ideas 2008/2009" item from the menu at left



9.33AM : The camper opened up, the blow-mould table off the mattress it was on for transport & ready to start putting equipment on. Everything open wide to try to stay cool.



9.33AM : Showing the proximity of the camper "shelter" to the 4WD & antennas. Note that the antennas had to be put up before the camper could be positioned as there is only "so much" coax feeder available.



9.33AM : Overall view of physical station setup, view is westwards.



9.33AM : Blow-mould table ready to have equipment assembled on it. Folding chair plus rear-end "softening" cushions on the camper's mattress awaiting unpacking.



10.31AM : The equipment is in place & powered up.

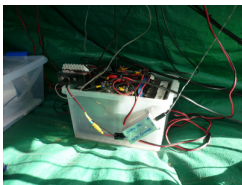
From Left to Right :
 Kenwood TR751A & 1296 transverter (20+w)
 Icom IC-718 & 432 transverter (30+w)
 Yaesu VX7R on 439 MHz FM (5w)
 Icom IC-7400 on 6 & 2m SSB & FM (100w)

Compaq notebook with wireless broadband access plus VKCL logging software
 External keyboard & optical mouse



10.31AM : Showing the 4 microphones on the table - no wonder I get confused as to which mic to pick up - at times, anyway !

That's all the time available to take photos for now. It's now time to test all of the gear and make sure it is ready for the 11AM local time start.



4.45PM : The sun is getting lower in the western sky and is now shining on the battery box. Most of the lower-current radio gear is plugged in via 6.35mm (1/4") mono phono plugs into a power breakout box. All high-current devices are attached directly to the battery connector assemblies with spade lugs & wingnuts.

No apologies for the messy look - it works and is quick !



4.45PM : VKCL software on screen with VKLogger in the LHS background. This photo also shows the little LED battery voltage monitor on top of the IC-7400



4.45PM : I guess this is "an advert" for the "nibblies" taken along for the outing. Note the view out through the window mesh south-east towards Springbrook.



4.45PM : This is the view NE towards the only part of the Gold Coast visible through the gap in the high country. Note the shadows of the antennas on the grass indicate that they were actually pointing just west of south at the time.



4.45PM : The sun is lower and the shadows from the trees to the west-south-west are starting to cover the camper. The generator is just off the LHS of this photo.



4.45PM : This photo gives a little better contrast of the FD antenna stack against the mainly-grey sky.



6.59PM : The last contact has been made and I have emerged to start the packing-up process. This view of the antennas against the twilight sky was just worth the time-out for a photo.



6.59PM : Final photo for the outing. Just after this one, the power was turned off, the notebook shut down & the packing proceeded.

7.45PM : All packed & departed the site.

It's dark and the mossies are out in full force.

Just as well I took the 'Rid'.

The table below is a summary extracted from the VKCL software used during the event :

Band	QSOs	Activated Grids	Worked Grids	Points
6 m	36	1	14	186
2m	34	1	6	312
70cm	14	1	4	320
23cm	9	1	3	392
<i>Totals</i>	<i>93</i>	<i>4</i>	<i>27</i>	<i>1210</i>

Did I enjoy my field day outing - you betcha..

Am I looking forward to the next one - you betcha..

Would I like more stations to participate - YOU BETCHA !!!!

Am I going to find a new location before the next one - yes, probably, if I can find one well away from noisy power lines.

RESULTS : 7 TH PLACE IN 8 HOUR, SINGLE OPERATOR, PORTABLE SECTION